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JOB SEARCH METHODS: THE CHOICE BETWEEN THE PUBLIC AND THE PRIVATE SECTOR

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1. Introduction[*]

It is well known that the lack of information often leads to the difficulty of decentralised decision units solving coordination problems through market functioning. In labour market the lack of information is often characterised by asymmetric information on heterogeneous labour skills and the related productive capabilities [Spence, 1973] and coordination mainly concerns the matching of vacant jobs with unemployed individuals, which results from a costly and time-consuming process. Coordination involves also the matching between job skills and vacancies requiring specific skills. This process is characterised by the existence of uncertainty as unemployed individuals know the general features of wage distribution in an area but ignore which firms are offering each wage. Accordingly, coordination on the side of unemployed workers involves a searching activity based on the gathering of information on available vacancies, the related wage and skill, whereas on the side of firms the gathering of information on the characteristics of individuals willing to fill the vacancies like their skills. As to unemployed workers, the distinction among search methods plays a significant role in the final result of their job search.

Since recently empirical studies have focussed on the decision-making process of individuals looking for a job and on their

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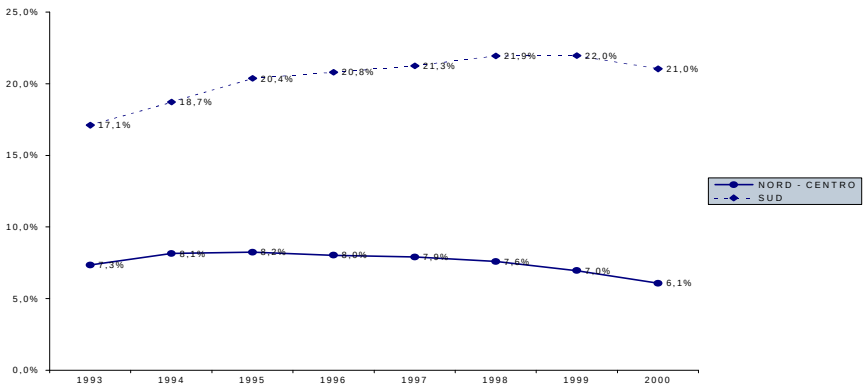
searching behaviour in order to verify the effectiveness of the search methods adopted, including informal networks [Casavola-Sestito, 1995; Holzer, 1988; Montgomery, 1991]. It is generally accepted that people can quite often get information on job vacancies through friends and relatives, as it is less costly in terms of time and money. On the one hand, employers may regard referrals coming from their current employees, acquaintances and relatives as more reliable and informative than job applications. On the other hand, unemployed workers may consider their employed friends, relatives and acquaintances as a very useful and reliable source of information on the type of job available, the skills required and work environment. Starting from this analytical strand, in this paper we will focus our attention on the factors affecting the individual choice of different search methods and, in particular, on resorting to family-and-friend networks in Italy. The analysis cannot overlook one of the structural characteristics of the Italian economy defined by its striking regional dualism (Amendola, Caroleo, Coppola, 1999). In fact, from the sixties to the nineties the difference between the unemployment rate in the South and in Centre-North rose from about one to fifteen percentage points (**TAB. 1, Graph. 1**).

GRAPH. 1 – UNEMPLOYMENT RATE, BY TERRITORIAL AREA (1993 - 2000)



TAB. 1 – UNEMPLOYMENT RATE, BY TERRITORIAL AREA (1993 - 2000)

YEARS	ITALY	NORTH - CENTRE	SOUTH	DIF
1993	10,1%	7,3%	17,1%	**-9,8%**
1994	11,1%	8,1%	18,7%	**-10,6%**
1995	11,6%	8,2%	20,4%	**-12,1%**
1996	11,7%	8,0%	20,8%	**-12,8%**
1997	11,7%	7,9%	21,3%	**-13,4%**
1998	11,8%	7,6%	21,9%	**-14,3%**
1999	11,4%	7,0%	22,0%	**-15,0%**
2000	10,6%	6,1%	21,0%	**-15,0%**

Source: Istat.

In 2000 the unemployment rate in the South was 21%, while in the Centre-North was about 6%. Though the labour market dualism between the North and South has been prevalently sharpened by a negative trend in labour demand in Southern Italy, there are also other variables that can be considered as partly explaining the difference between the two areas like structural and institutional factors (Costabile, 1996) like the role of family, the weight of informal sector, social discouragement effects and the efficiency of public institutions. For this reason we take as important to analyse the behaviour of labour supply by comparing the North-Centre with the South of Italy.

Our analysis is empirical and takes into consideration the case of Italy using the 1993 Survey of Household Income and Wealth (SHIW) of the Bank of Italy. In our analysis we chose this survey as the SHIW includes the information on families' incomes, which we consider as important as to the selection of different job search strategies. Besides, we were constrained to use this year because only in 1993 the BI surveyed different type of search actions.

The paper consists of the following parts: in §2 the theoretical aspects are underlined; in §3 the dependent and explanatory variables are illustrated; in §4 the data and the econometric model are explained; in § 5 we describe the empirical results; §6 contains the conclusion.

2. The choice of search methods: some considerations

As previously stressed, the objective of this empirical analysis is to understand how individual look for a job and, thus, how they decide to choose the search methods within the set that will be specified below following the Bank of Italy Survey. The main aspect to be emphasised in this analytical frame is that the choice of search methods is endogenous. As it is well known from the literature on job search, the relevance of this aim is related to the fact that the search process contributes to determine the job-finding rate. Accordingly a crucial role is played by the factors affecting searching behaviour of individuals. Blau and Robins [1990] have pointed out to the different stages of this process consisting of the choice of search methods, the intensity to dedicate to each method, which employer to contact first and the acceptance decision. As to search methods, they are characterised by two dimensions: search can be more or less extensive with respect to the number of search methods used [Blau and Robins, *idem*], and more or less intensive with respect, for instance, to the number of hours devoted to search though it is important to underline that the number of methods used has also been taken as a proxy for total search intensity by Holzer [1988]. In both cases the distinction among the types of search methods is crucial but concerns two different aspects of the search process. Decision-making, on the one hand, concerns the choice of the time to devote to search, which in the theoretical model elaborated by Holzer [*idem*] addressing the issue of the optimal choice of search intensity concerning different methods, is influenced by the productivity of the search methods in terms of receiving job offers, their own costs, non wage income and income expected from employment. On the other, it regards the choice of particular search methods which are known as being more effective as to the specific job individuals look for, according to their own characteristics and the economic features of their geographical area. In this respect, job seekers have *to select a strategy among distinct methods basing their choice on the comparison of appraised expected benefits from choosing a search channel with the opportunity cost of time* [Osberg, 1993: 354]. Osberg highlights the fact that 'individuals have different levels of skill

and possess different resources, while fish (jobs) of various types are known to respond to different strategies' (Osberg, *ibid.*:349). Lindeboom, Van Ours and Renes [1994] consider labour market as divided in submarkets by job type. In each submarket the match between vacancies and job-seekers occurs if both employers and individuals looking for a job resort to the same search channel, which implies a tight link between the type of job one is searching for and the search method that has to be used. Hence, for instance, the recruitment strategy of employers is important as they may prefer to advertise a vacancy rather than resorting to the public employment agency in order to recruit a high skilled worker [Lindeboom et al., *idem*].

Taking into account the above considerations, our analysis will focus on the impact of several factors on the choice of *specific search methods*, rather than either on the choice of the number of search actions characterising the search method used by unemployed, or on the time spent searching. Though it is important to stress that as the combinations of search methods will be included in our analysis, this will allow drawing some conclusions also on the choice of search intensity following Holzer [*idem*].

In particular, our analysis takes into account the selectivity bias in the choice of search methods (Osberg, *idem*), which is not possible in the case of the choice of search intensity.

2.1 The specification of search methods

The specification of search methods draws on question B15 of the Bank of Italy Survey concerning several types of search actions. In detail, the question is: 'How have you searched for a job? Through: 1) the state employment agency; 2) taking a competitive examination to enter PA; 3) answering advertisements of job positions on the newspapers; 4) direct employer contact or sending curricula; 5) private employment agencies; 6) signalling of parents, friends and relatives to potential employers; 7) inserting personal data in a data base; 8) starting an autonomous activity'.

As *individuals have different skills and resources whereas jobs of various types respond to different strategies*, we decided to group the search actions on the base of the type of mediation re-

quired to look for a job in the private or public sector. Thus, a specific method can result more effective to individuals with some resource endowment, including, for instance, a high skill level and social contacts in labour market. If, for instance, this search channel is suitable to looking for a job in the private sector, the choice of this sector is driven, on the one hand, by the evaluated effectiveness/productivity of the method, related both to individual characteristics and to labour market conditions, and, on the other, by the opportunity cost of time. The main implication of the approach chosen is that the decision of working in the public rather than in the private sector largely is conditional on the appraised net benefits of search methods, affected by individual resource endowment rather than the specific attributes of each sector. This is why the variables characterising private and public jobs such as their respective expected incomes have been neglected, though they can play an important role.

According to our classification, job seekers in the private sector may choose either not to use any market intermediary and to directly search for a job mainly through checking advertisements on the newspaper, direct employer contact and sending curricula or to resort to private employment agencies and to inserting their name in a data base (PRIVATE). Individuals may also select informal networks (NETWORKS), which have been considered separately from the other methods used to look for a job in the private sector as our attention in part focuses on the individuation of the type of individuals resorting to this channel. In the literature networks of social ties are taken as mainly searching through the mediation of friends and relatives[1]. Rees includes 'referrals from employees, other employers, and miscellaneous sources, and walk-ins or hiring at the gate' in informal channels [Rees, 1966:559]. Following Lindeboom et al. [1994], informal search methods cover resorting to friends and relatives along with direct employer contact whereas Blau and Robins [1990] separate friends and relatives from direct employer contact. As in the BI

[1] In a table elaborated by Montgomery [1991: 1409] reporting the results of four studies on the search methods used by job seekers [Myers and Shultz, 1951; Rees and Shultz, 1970; Granovetter, 1974; Corcoran et al., 1980], there is the distinction among friends and relatives, gate application, employment agency, advertisements and other.

survey the question on direct employer contact is associated with sending curricula, we decided to consider the informal method as including only the signalling of parents, friends and relatives to potential employers.

As to the individuals searching for a job in Public Administration (PA), usually they have to take a competitive examination.

The choice of the state employment agency (SEA) represents a rather peculiar case. Following the law on hiring through SEA in force in 1993, unemployed had to be registered in the queue at the State job agency in order to be regularly hired in some formal economic sectors. Moreover, a specific category of employers was compelled to hire a quota of unemployed registered in the queue with an unemployment duration longer than two years. Interestingly, individuals could also decide to register in a special queue each year in order to be appointed to low positions in the PA, only requiring compulsory or secondary schooling. As to placing in this special queue, it was affected by individuals' family dependence, economic conditions and assets and for how long they had been registered with SEA.

These characteristics of SEA have led us to consider PRIVATE, NETWORKS and PA, taken alone, as irrelevant alternatives to their respective combination with SEA and to group them together[2]. Thus:

SEAPRIVATE = PRIVATE + (PRIVATE + SEA)
SEANETWORKS = NETWORKS + (NETWORKS + SEA)
SEAPA = PA + (PA + SEA)

Further considerations rest on some stylised facts, which have long been known to economists. Quite often the choice of public job agencies is also driven by the link between the eligibility for unemployment insurance programs and the registration with state employment office. This goes along with the fact that employers usually list low wage/low skilled jobs through public agencies. Following Osberg's argument [*idem*], the individuals choosing this channel after evaluating net benefits across different search meth-

[2] For instance SEAPRIVATE contains all the search actions under the definition of PRIVATE and the association of PRIVATE with SEA.

ods, have fewer opportunities and expect low returns from alternative strategies. On the contrary, high ability and highly educated workers generally prefer the other search channels. Though they can combine SEA with the other strategies as they can benefit from the unemployment insurance programs while looking for a job. Accordingly, in order to take into consideration the fact that less skilled individuals with few opportunities may resort to the state job agency, we consider SEA as a separate searching channel.

As to informal channels, it has been highlighted that employers favour employee referrals and job seekers favour the mediation of a friend doing a job in which they are interested in [Rees, 1966]. The reason why this happens is that the complex of family members and friends' personal ties may, on the one hand, facilitate the access to information and its transmission by reducing time and costs afforded to get it [Holzer, *idem*] as gathered information is the result of the externality from being embedded in social networks, and may on the other support its reliability. Information in turn concerns, for instance, job vacancies and required skills, skills of unemployed workers, the fairness of supervision. In this respect Montgomery [1991] has elaborated a theoretical model in which employers use the referrals of their high ability workers to recruit workers with the same ability, in order to overcome adverse selection characterising labour market. For this to happen, the role played by the social ties linking high ability employed workers and job seekers with the same ability is crucial. More generally the embeddedness in networks of social relations can be considered as a source of mutual trust among the agents as to the reliability of information. For instance, the iterated interaction not only between agent *i* and *j* but also between agent *i* and the other members of the network fosters the emergence of reputation mechanisms in a broad sense [Raub and Weesie, 1990]. In this case the embeddedness in an information network helps an individual to gather additional information on the behaviour of his partners when interacting with third parties [*ibid.*]. Accordingly if an individual embedded in the network (including employers and job seekers) provides information both on the ability of an unemployed worker to a potential employer and on the characteristics of the available job to the unemployed, the reliability of the information may be guaranteed

by the reputation effect. As cheating behaviour on information, can be sanctioned by all the individuals belonging to the network. In this context, the size of a group can be important, as it can be more likely that job seekers belong to a network of personal contacts in small communities, where it is not mistaken to hold that individuals know each other. Thus, resorting to networks of social ties is held to imply both that unemployed workers have been informed on the vacancies available and that individuals signalling the availability of unemployed workers also guarantee for their skills and their suitability to the job. Friends, relatives and acquaintances may know the employers either because they are still or used to be their employees, or through other channels.

Differently from the literature mainly considering the use of *single* search methods, we also analyse their combinations, which interestingly allow contemplating the case of those individuals looking for a job both in the private and public sector. Thus, we single out the search method (COMBPRIV) used by job seekers in the private sector characterised by the combination between market, non-market intermediaries (PRIVATE) and networks of social ties (NETWORKS) along with the state employment agency (SEA):

COMBPRIV = (PRIVATE + NETWORKS) +
+ (PRIVATE + NETWORKS + SEA)

The other search channel (COMBPA), resorted to by unemployed searching both in the public and private sector, consists of all the possible combinations among PA, market and non-market intermediaries (PRIVATE), networks of social ties (NETWORKS) and the state employment agency (SEA):

COMBPA = (PRIVATE + PA) + (NETWORKS + PA) +
+ (NETWORKS + PRIVATE + PA) +
+ (SEA + PA + PRIVATE) +
+ (SEA + PA + NETWORKS) +
+ (SEA + PA + NETWORKS + PRIVATE)

3. Dependent and explanatory variables

The dependent variable is the probability of the i*th* unemployed selecting the j*th* alternative among the different types of search methods, SMs, whose choice is affected by the explanatory variables for any given individual:

$$SM_{ij} = f(UY_i, C_i, EW_i, T_i, \Pi_i, L\Pi_i, N_i) \quad (1)$$

In **TAB. 2** it is reported the percentages of individuals resorting to each search method as specified in the previous section.

TAB. 2 – SPECIFICATION OF EACH SEARCH METHOD

Type of SMS	**Percentage of unemployed who used each SM**		
	Italy n. 1894	**North-Centre n. 791**	**South n. 1103**
• **SEA**	14,89	10,75	17,86
• **SEAPA**	8,29	4,55	10,97
• **SEAPRIVATE**	17,90	29,84	9,34
• **SEANETWORKS**	27,40	18,20	34,00
• **COMBPA**	13,41	9,99	15,87
• **COMBPRIV**	18,11	26,68	11,97

Source: Elaboration on the Bank of Italy Survey (1993).

The dependent variables embody the expected benefits and the opportunity cost of time for individual i from resorting to the jth search method. They have been specified as follows:

- Individuals' age (AGE), affecting the productivity of each search method as it can induce a discriminating behaviour of employers, and representing the value of leisure.
- A dummy variable for gender (FEMALE), influencing both the productivity of search methods via a discriminating behaviour of employers, and the value of leisure to women.
- Two dummy variables for education respectively defined as

compulsory and high secondary education (COMPULSORY and HIGHSEC), considered with respect to university education, influencing the productivity of each search method as employers often take the education level as a signal of individual skills. They are considered also as a proxy of the wage level expected from work. Finally, the schooling level can capture Montgomery's effect as by enriching individual resource endowment, may induce unemployed to resort to their more skilled friends and relatives in order to look for a qualified job.

- A dummy corresponding to having had at least a job in the past (EXPER), which represents individual work experience and implies that human capital is based on learning on the job. It is a signal of the skills of unemployed to employers and affects the productivity of search methods. Moreover, we decided to take it as a control variable of the network impact as individuals through their own past work experience may have acquired personal contacts on labour market.
- A set of dummies indicating the geographical location, NORTH and CEN - Centre, with respect to the South, which are taken as representative of the level of economic activity in each area and, thus, as proxies of the tightness of the market in these macro-areas.
- A set of variables indicating provincial unemployment rates. They represent the tightness of local labour market, which is expected to drive the choice of working in the public sector rather than in the private one when the level of economic activity in the local area is low. In this respect, it is often held that individuals in the South have a strong preference for the public sector, which may be due to the low availability of vacancies in the private sector. It may also be true that where the labour market is not tight, unemployed looking for a job in the private sector may prefer to resort to their personal contacts.
- A set of dummies representing the number of inhabitants of the municipalities (*comuni*) to which individuals belong (COM020, COM2040, COM>500, (.000)) with respect to the municipalities of medium size (COM40500, (.000)), which embodies the embeddedness in informal networks. As previously argued, when people live in small communities, it is more

likely that they tend to know each others and to resort to personal contacts as the information on the characteristics of the job available and on the ability of the individuals to be employed is more reliable. Thus, this type of variable simply indicates whether individuals belong to a network but does not give any additional information on either its size or the type of social ties. It simply tells that, for instance, high ability workers in a small municipality may resort to this type of SM, but their ability can concern any type of profession ranging from blue to white collars.

– The number of components of a family, which along with household disposable income (UY)[3] expresses the alternative income of individuals when unemployed. As to this variable, it is believed that individuals may choose to work in the public sector when they receive the financial support of their family. In fact, the frequency of public competitive examinations is rather rare and once individuals pass them, a long spell of time may be needed before they are called to fill the position.
– Two dummies indicating whether one is either household head or children with respect to being spouse (HOUSEHOLDH, CHILDREN), which are considered to affect individuals' value to leisure and, therefore, search costs in terms of time. They also capture the marginal value of income related to the individuals' financial responsibility for the family, which allows considering this variable as a proxy of search costs across individuals.

[3] It includes wages, self-employment incomes, pensions and transfers, capital income.

TAB. 3 – SPECIFICATION OF THE INDEPENDENT VARIABLES

EXPECTED BENEFITS FROM SEARCH METHODS RELATED TO INDIVIDUAL CHARACTERISTICS AND LABOUR MARKET CONDITIONS	
P = PRODUCTIVITY OF SEARCH METHODS ACROSS INDIVIDUALS WITH DIFFERENT CHARACTERISTICS	**AGE**; **FEMALE**; **COMPULSORY** and **HIGHSEC**; **EXPER** corresponding to having had at least one job in the past and signalling skills to employers.
EW = EXPECTED INCOME LEVEL RELATED TO INDIVIDUAL EDUCATION CHARACTERISTICS	**COMPULSORY AND HIGHSECONDARY** education.
LP = PRODUCTIVITY OF SEARCH METHODS RELATED TO LOCAL LABOUR-MARKET TIGHTNESS	**PROVINCIAL UNEMPLOYMENT RATE**
T = PRODUCTIVITY OF SEARCH METHODS RELATED TO LABOUR-MARKET TIGHTNESS IN MACRO-AREAS	**NORTH AND CENTRE**, indicating the geographical location.
N = INDIVIDUAL RESOURCE ENDOWMENT AFFECTING THE CHOICE OF NETWORKS	**COM020**, **COM2040**, **COM>500**, **(.000)** influencing *the embeddedness* in networks of social ties; **EXPER**.: personal contacts developed through past work experience; **COMPULSORY** and **HIGHSEC** capturing Montgomery's effect
BENEFITS FROM UNEMPLOYMENT RELATED TO INDIVIDUAL CHARACTERISTICS	
UY = INCOME OF INDIVIDUALS WHEN UNEMPLOYED	**HOUSEHOLD INCOME**
OPPORTUNITY COST OF TIME RELATED TO INDIVIDUAL CHARACTERISTICS	
C = COSTS OF SEARCH IN TERMS OF TIME	**AGE**; **FEMALE**; **HOUSEHOLDH** and **CHILDREN** indicating the individual position in a family.

4. Data and econometrics aspects

The data used in this paper are drawn from the 1993 Survey of Household Income and Wealth (SHIW) of the Bank of Italy. The SHIW surveys a representative sample of the Italian resident population and collects detailed data on demographics, household's consumption, income and balance sheets, and also on labour and job search conditions of families' members[4].

The sample is represented by the individuals who were seeking for a job in 1993 (n. 2.402), from which we excluded the employed and those in the Redundancy Fund. The remaining individuals partly remained unemployed over the year (n. 1.488) and partly modified their labour condition during the same period (n. 529). From the latter group we excluded self-employed individuals at the end of 1993 ant those who were searching for a self-employed job.

The total number of individuals is 1.894 (**TAB. 4**) and 24% (n. 458) changed their occupational condition whereas 76% (n. 1.436) remained unemployed during 1993. Among the job seekers who changed their labour condition (n.458), 99% received al least a job offer, whereas the others had a job that they lost at the beginning of 1993, and did not receive any other offer. Instead, among those people who did not find any job, only 2,3% received an offer and refused it.

TAB. 4 – JOB SEEKERS CHARACTERISED BY THE NUMBER OF RECEIVED JOB OFFERS

	TOTAL	0 OFFERS	AT LEAST AN OFFER
UNEMPLOYED DURING 1993	1.436	1.404 (97,8%)	32 (2,2%)
JOB SEEKERS WHO CHANGED THEIR POSITION IN 1993	458	5 (1%)	453 (99%)

Source: Elaboration on the Bank of Italy Survey (1993).

[4] In the SHIW there is not any information about the duration of unemployment.

As to the distribution of unemployed by type of search method, it is possible to see from **TAB. 2** in the previous section that the percentage of unemployed choosing each SM varies from 8,3% to 27,4%. The lowest percentage is for SEAPA (8,3), while the highest is for SEANETWORKS (27,4). High is also the percentage of individuals choosing COMBPRIV (18,3%) and SEAPRIVATE (17,9%), followed by the percentage of unemployed choosing SEA alone (14,9%). Low is the percentage of COMBPA (13,4%).

Interestingly (**TAB. 5**), 41,7% of individual choices (n.1894) concerns single search *actions*[5] whereas 58,3% concerns combined actions. In details, all search methods are prevalently associated with others though the search *actions* that are more frequently selected also alone, are Sm1 (registering in the queue at the job office - included in SEA), Sm6 (signalling of parents, friends and relatives - included in SEANETWORKS) and Sm2 (taking a public examination - included in SEAPA). For instance, in our sample 56% registers in the queue at the state employment office and among these individuals, the 26% register with SEA whereas 73,4% mixes this strategy with the others.

These results empirically support our aggregation of the search actions as it is important to analyse the characteristics of the unemployed who resort to SEA separately from those who combine it with the other search channels (SEAPA, SEAPRIVATE and SEANETWORKS). The same holds for the actions represented by taking a public examination and the signalling of parents, friends and relatives, which should be taken alone but it is believed that the analysis of individual characteristics is not distorted by the combination of these actions with SEA.

[5] As already specified, the detailed specification of search actions within each SM, corresponds to the following question (B15 of the BI survey): How have you searched for a job? through: Sm1) registering in the queue at the State job office; Sm2) taking a competitive examination to enter PA; Sm3) answering adverts in the newspapers; Sm4) direct employer contact or sending curricula; Sm5) going to private job agencies; Sm6) signalling of parents, friends and relatives; Sm7) inserting personal data in a data base; SM 8) starting an autonomous activity; Sm9) others; (Sms have been added).

TAB. 5 – DISTRIBUTION OF INDIVIDUALS BY SINGLE AND COMBINED SEARCH ACTIONS

TYPE OF STRATEGY	SINGLE STRATEGY	COMBINED STRATEGY	TOTAL
Sm1	26,6%	73,4%	56,0%
Sm2	18,4%	81,6%	24,4%
Sm3	7,5%	92,5%	24,7%
Sm4	16,1%	83,9%	33,4%
Sm5	9,7%	90,3%	7,1%
Sm6	25,9%	74,1%	55,3%
Sm7	5,6%	94,4%	0,95%
Total	41,7%	58,3%	100%

Source: elaboration on BI data.

The actions less frequently used alone are Sm7 (inserting personal data in a data base), Sm3 (looking up into the newspaper and answering job adverts), Sm5 (going to private job agencies) and Sm4 (direct employer contact or sending curricula). The description of our sample again seems to support the hypothesis underlying the distinction among the search methods such that these search actions have been grouped in SEAPRIVATE. For instance, inserting personal data in a data base is mainly combined with direct employer contact or sending curricula (Sm7), whereas going to private agencies (Sm5) is almost equally associated with all the other actions.

As to looking up into the newspaper and answering job adverts (Sm3), it is adopted by 468 individuals and 92,5% mixes it with the other actions, in particular, 56,1% of the latter associates Sm3 with including registering in the queue at the job office (Sm1) and, 42,7% associates Sm3 with the signalling of parents, friends and relatives (Sm6). Again, this justifies the choice of considering, on the one hand, the combination of Sm3 with Sm1 in SEAPRIVATE and, on the other, the combination of Sm3 with Sm6 in COMBPRIV as distinct.

In the following table (**TAB. 6**), are reported the percentages concerning the number of one-by-one combinations of search actions, over the total number of mixed strategies. On the diagonal, the percentage regards the number of individuals choosing indi-

vidual actions divided by the total of unemployed selecting a single action. For instance, with respect to registering with SEA, Sm1, we previously underlined that 74,3% of these individuals mixes this action with the others, and from Tab. 6 it is possible to see that 50,2% of individuals choosing mixed strategies, combines SEA with resorting to networks (Sm6) and then 35,7% of individuals choosing single strategies regards SEA (Sm1).

Thus, it is possible to underline the following regularities:

1) 50,2% regards registering in the queue at the job office combined with family and friend networks, and 34,4% regards only networks (Sm1 and Sm6 - SEANETWORKS);
2) 23,9% concerns registering in the queue at the job office combined with taking a public examination (Sm1 and Sm2 - SEAPA);
3) 16,8% e 25,1% regard resorting to friends and relatives mixed with answering job advertisements in the newspapers and sending curricula (Sm6, Sm3 and Sm4 - COMBPRIV);
4) 35,7% regards registering in the queue at the job office alone (Sm1 - SEA).

TAB. 6 – CROSS TABLE OF THE DISTRIBUTION OF INDIVIDUALS BY SINGLE AND COMBINED SEARCH ACTIONS

	Sm1	**Sm2**	**Sm3**	**Sm4**	**Sm5**	**Sm6**	**Sm7**
Sm1	35,7%	23,9%	22,0%	31,2%	7,2%	50,2%	0,8%
Sm2	23,9%	4,4%	10,2%	9,0%	4,2%	11,8%	0,8%
Sm3	22,0%	10,2%	10,8%	14,1%	3,2%	16,8%	0,8%
Sm4	31,2%	9,0%	14,1%	12,9%	3,4%	25,1%	1,0%
Sm5	7,2%	4,2%	3,2%	3,4%	1,6%	4,2%	0,2%
Sm6	50,2%	11,8%	16,8%	25,1%	4,2%	34,4%	0,6%
Sm7	0,8%	0,8%	0,8%	1,0%	0,2%	0,6%	0,1%

Source: elaboration on BI data.

As to the other characteristics of the sample, we can see from **TAB. 7** that the average age is about 28 years and is about the same in the different geographical areas. Females represent 50% of the individuals in the sample, 60% has only compulsory school

education and is prevalent in the South while individuals with university degree are slightly more prevalent in the North and the Centre. In the South, there is less than 19% of individuals with at least a job experience. This percentage rises in the North and the Centre to 42%. In Italy, individuals live prevalently in municipalities of 40.000 - 500.000 inhabitants, and 57% of the southern job seekers live in this type of municipality. In the North and in the Centre, there is a higher ratio of job seekers living either in the smallest municipalities or the biggest ones. The average number of family's components is slightly higher in the South (4,4) than in the North and the Centre (3,7). Regarding the position of individuals in a family, job seekers are mainly children (64%), household heads are prevalently located in the South whereas spouses in the North and the Centre.

TAB. 7 – DESCRIPTIVE STATISTICS

	ITALY	NORTH - CENTRE	SOUTH
Age	28,2	28,5	28,0
North	24,6%	0,0%	0,0%
Centre	17,2%	0,0%	0,0%
South	58,2%	0,0%	0,0%
Female	50,3%	58,9%	44,1%
Male	49,7%	41,1%	55,9%
Compulsory	60,0%	58,0%	61,5%
High secondary	34,5%	35,9%	33,5%
University	5,4%	6,1%	5,0%
Some work experience	28,2%	42,1%	18,3%
No work experience	71,8%	57,9%	81,7%
COM020 (Municip. 0-20.000 Inhab.)	17,5%	19,6%	16,0%
COM2040 (Municip. 20.001-40.000 Inhab.)	18,5%	19,7%	17,7%
COM40500 (Municip. 40.001-500.000 INHAB.)	53,4%	48,4%	56,9%
COM>500 (Municip. More 500.000 INHAB.)	10,6%	12,3%	9,4%
Household head	15,8%	13,0%	17,9%
Children	64,5%	63,1%	65,5%
Spouse	19,6%	23,9%	16,6%
Household income (.000)	31.241,4	39.043,8	25.643,9
Family components	4,127	3,709	4,427
Local unemployment rate	12,1%	8,7%	14,5%

To test the effects of the explanatory variables on the alternative probabilities of choosing different types of search, we estimated a multinomial logit model. This model jointly analyses the probabilities of selecting each search method (SM) drawn from the set consisting of SEA, SEAPRIVATE, SEANETWORKS, SEAPA, COMPRIV, COMBPA, as previously specified.

We estimated the following model:

$$\text{Prob}(SM_i = j) = \Lambda(\beta' x_i) + u_i \qquad \text{for } j = 0, 1, 2, \ldots 5 \qquad (2)$$

It represents a behavioural equation defining how individuals choose each search method. SMs are the search methods to be chosen, x_i is the vector of characteristics for any individual *i* and $\Lambda(.)$ indicates the logistic cumulative distribution function[6]. The logit equations are estimated for the whole sample of unemployed (n.1.894). Besides, in order to test the differences in the probability of choosing the search strategies between the unemployed in the North-Centre and the South we preferred not to opt for coefficient homogeneity and estimated a regression on the whole sample, including a dummy for the intercept terms (North - Centre = 1) and the multiplication of this dummy by the other regressors. Which allows capturing slope differences. The separate estimates of the two geographical areas are reported in appendix.

The multinomial logit has some weaknesses. One is that the choices made are assumed independent of the remaining alternatives. This is known as the independence of the irrelevant alternatives. In order to check for a latent dependence of the disturbances we run the Hausman and McFadden (1984) test, whose result always was the acceptance of the null hypothesis of a non-systematic difference in coefficients. As the six alternatives are mutually exclusive and exhaustive, only five of the six sets of coefficients are uniquely defined. The logit parameters are somewhat difficult to interpret, for this reason the derivatives are evaluated at the means and are reported in the tables. The derivatives indicate the marginal effect of a change in the explanatory variable on the absolute probability of a given SM choice in the vicinity of the sample mean. The derivatives are reported also for all the search methods.

[6] For a discussion of the logit framework see Nerlove and Press (1973).

5. How people search: the results of the multinomial logit model

The results of the logit model allow the description of the impact of the independent variables on the probability of using each SM and their combinations (**TAB. 9-10**). The probability estimates, assuming mean values, are showed in **TAB. 8** and the derivatives reported in **TAB**. **9-10** indicate the change in the probability of choosing each SM with respect to average unemployed for changes in the explanatory variables[7]:

TAB. 8 – PROBABILITY ESTIMATES ASSUMING MEAN VALUES

Type of SMS	Italy n. 1894	North-Centre n. 791	South n. 1103
• **SEA**	15,94	10,64	18,55
• **SEAPA**	6,03	1,67	9,09
• **SEAPRIVATE**	18,92	33,72	10,89
• **SEANETWORKS**	28,12	17,99	34,55
• **COMBPA**	10,47	7,28	12,55
• **COMBPRIV**	20,51	28,68	14,35

As one can notice from both the probability estimates at mean values (**TAB. 8**) and the coefficient estimates concerning Italy (**TAB. 9**), the South behaves differently from the North and the Centre. In the South unemployed prefer to resort to the state employment agency (SEA), taking competitive exams to enter public administration taken alone (SEAPA) or combined with the strategies required to look for a job in the private sector, and networks of social ties (COMBPA). Interestingly, unemployed in the North and

[7] We know that the marginal effects are more appropriated for continuous independent variables. For dummy independent variables it should be more effective the measures of discrete change in probabilities, but most frequently the marginal is computed when variables are held at their mean, possibly with dummy variables held at 0 or 1 [Scott Long, J., (1997)].

the Centre of Italy tend to privilege the search methods appropriate to searching for a job in the private sector like SEAPRIVATE and COMBPRIVATE. As one would expect, labour market tightness in these macro-areas induces individuals to consider, for instance, checking advertisements on the newspaper, direct employer contact and sending curricula alone or combined with resorting to personal contacts in labour market as more productive. Thus, this evidence seems to confirm the hypothesis that in the South the low availability of vacancies in the private sector may induce individuals to have some preference for the public sector. Only with respect to the choice of SEA alone, the Centre does not differ from the South (**TAB. 9**).

TAB. 9 – MULTINOMIAL LOGIT ESTIMATES OF THE DETERMINANTS OF CHOOSING THE SEARCH METHODS - ITALY (§)

ITALY	SEA	SEAPA	SEAPRI-VATE	SEANET-WORKS	COMBPA	COMBPRIV
Age					+0,013*	
Ageq					-0,0002**	
North (dum. 1/0)	-0,103***	-0,063***	+0,276***	-0,182***	-0,105***	+0,177***
Centre (dum. 1/0)		-0,027*	+0,182***	-0,119***	-0,074***	+0,077**
Female (dum. 1/0)	+0,047*	-0,027*	-0,0500*			
Compulsory (dum. 1/0)	+0,124*	-0,155***		+0,462***	-0,230***	-0,116*
High Secondary		-0,065***	-0,018**	+0,294***	-0,086***	-0,102*
Some work experiences (dum. 1/0)	-0,041*					+0522**
COM020 (dum. 1/0)	+0,054**				-0,046**	
COM2040	+0,058**					-0,064**
COM>500			+0,062**			
Household head (dum. 1/0)	-0,128***			+0,084*		
Children	-0,047*			-0,085**		+0,097***
Household income (.000)	-0,055**		+0,051**		+0,039**	-0,041*
Family components						-0,093**
Local unemployment rate		+0,244***	+0,487**		-0,416***	
Constant	0,412	-0,223	-0,495*	0,013	-0,397**	0,690**
Chi2(80)	691,38					
Pseudo R2	0,13					

(§) For each variables we reported the derivatives (at sample means), and the value of the asymptotic t-*statistic. The chi2 reported in the bottom line tests the null hypothesis that all parameters except the constant are zero.*

An in-depth analysis comparing the North-Centre with the South (**TAB. 10**) highlights interesting behavioural differences. As to the choice of SEA, females in the South have a notably high probability of selecting the state employment agency in comparison both with males in the same geographical area and with females in the North-Centre, the latter do not significantly differentiate from males. As in the South individuals living in small municipalities are more likely to choose this channel whereas the contrary occurs in the big ones, one can infer that when the size of municipalities rises, the probability of resorting to the state employment agency decreases. On the contrary, in the North-Centre, this variable does not affect the searching behaviour of unemployed though there is a significant difference between the South and the North-Centre concerning very small municipalities (with a differential of 0,14). Interestingly, there is a remarkable diversity characterising the effect of local unemployment rate as when it increases, the probability of registering in the queue at the state employment agency rises in the North-Centre whereas declines in the South (with a differential of 1,28). The influence of the number of family components is positive in the North-Centre whereas non-significant in the South. Such difference is significant at 4% with a differential of 0,18. In both areas, households with low income are less likely to choose this method. Moreover one can notice that southern unemployed with some work experience and household heads do not tend to use this channel while in the North-Centre there is not any relevant effect.

As far as taking a competitive examination to enter public administration (SEAPA) is concerned, in the North-Centre when age increases, unemployed have a higher probability of selecting it, as age may be a discriminating factor in the private sector more developed in this geographical area. Though this variable is not significance in the South, the difference (between North-Centre and the South) is significant at 6% with a differential of 0,02. As one would expect in both areas the probability increases for unemployed with university degrees as in the public sector there may be greater opportunities of finding jobs requiring university education. In the South higher local unemployment rates increase the probability of selecting SEAPA and unemployed without any work experience and, thus, with scarce resource endowment in terms of

learning on the job and personal contacts in labour market prefer this channel, whereas the same variables are not significant in the North - Centre.

As to the choice of the search method required to find a job in the private sector, including checking advertisements in the newspaper, direct employer contact and sending curricula (SEAPRIV), interestingly southern females tend to resort less to this channel also in comparison with females in the North-Centre with a differential of -0,11 (though significant at 9%). The latter do not differentiate from males in the same area. Living in big municipalities and where the local unemployment rate is high has a positive impact in the South whereas is not effective in the North-Centre, and there is a difference between the two macro-areas of 0,11 significant at 6% in the former case and of 1,6 significant at 2% in the latter. In this respect, local labour market tightness does not give a clear-cut result as to the choice of SEAPA and SEAPRIV in the South as both search methods are more likely to be chosen when there is an increasing local unemployment rate. The evidence in the North - Centre shows that unemployed with university degrees, compulsory education and high household income prefer to resort to this channel. The same variables are not effective in the South.

The results concerning the choice of networks (SEANETWORKS) highlight that females in the North-Centre have a lower probability with respect both to males in the same area and to southern females with a significant difference of 0,19 (the latter do not differentiate from males). Besides, increasing age has a negative influence on the probability and increasing local unemployment rate has the opposite effect whereas they do not have any influence in the South. Though, it is important to stress that the difference between the North-Centre and the South concerning local unemployment rate is positive (1,35) and significant at 3%. Then, it is not mistaken to infer that when local unemployment rate increases, it is more likely that unemployed resort to personal contact in the North - Centre also with respect to the South. One can also notice that in the North-Centre, networks of social ties are evaluated as effective also by individuals living in small municipalities and with family dependence. Whereas in the South, mainly low skilled unemployed and spouses with respect to their children have a higher probability of selecting this channel. These results, mainly

in the South, do not seem to confirm Montgomery's effect as they show that individuals with scarce resource endowment in terms of education rather than skilled unemployed consider personal contacts as productive. Moreover, the evidence that household heads are more likely to choose this method, may reveal that this search method is less costly in terms of time to this type of unemployed. The differences between the North-Centre and the South concerning these variables are not significant. Finally, though in both macro-areas household income is not significant, the difference between them (North - Centre and the South) is positive (+0,12) and significant at 5%.

The combination of search methods, apt to looking for a job both in the private and public sectors (COMBPA) prevalently concerns the South (12,5%). In the North only 7,5% adopts this strategy, and unemployed do not differentiate from each other apart from individuals with compulsory school education who are less likely to select it and females who have a higher probability. In the South, unemployed with a university degree, living in small municipalities, in families with high income and where there is a low local unemployment rate, are more likely to mix the search methods suitable to searching both in the private and public sector. In this respect one can argue that increasing disposable household income leads individuals to invest in human capital and provides them with financial support adequate to intensively searching. The differences between the macro-areas are not significant.

As one would expect, combined strategies required to look for a job in the private sector (COMBPRIV) are considered as more productive in the North-Centre, where the level of economic activity notoriously is higher. In the South individuals with university education are more likely to select this method also with respect to the same type of unemployed in the North-Centre, who, on the contrary, do not differentiate from average behaviour. This result may also be explained by the influence of Montgomery's effect as university education by enriching individual resource endowment, may induce unemployed also to resort to their more skilled friends and relatives in order to look for a qualified job. In the North-Centre, increasing household disposable income and local unemployment rate lower the probability of resorting to SEAPRIV and the difference from the South (where the two variables are not sig-

nificant) is respectively of -0,09 and -1,68 and significant at 7% and 1%. Thus, if mixed strategies are taken as a proxy for total search intensity [Holzer,1988], the evidence reveals that low household income and local labour market tightness induce individuals to intensify their search. A final consideration concerns females, who have a higher probability of mixing the strategies linked to the private sector in the North-Centre also in comparison with females in the South with a difference of 0,17, significant at 1%. It seems that in this geographical area women prefer to combine networks with the other search strategy rather than resorting to it alone. Besides, in both areas young members of families, children, prefer this method.

Tab. 10 – MULTINOMIAL LOGIT ESTIMATES OF THE DETERMINANTS OF CHOOSING THE SEARCH METHODS - ITALY WITH INTERACTIONS BETWEEN NORTH - CENTRE AND SOUTH §

	SEA		SEAPA		SEAPRIV		SEANET		COMBPA		COMPRIV	
	SOUTH	NORTH CENTRE	SOUTH	NORTH CENTRE	SOUTH	NORTH CENTRE	SOUTH	NORTH CENTRE	SOUTH	NORTH CENTRE	SOUTH	NORTH CENTRE
Age				+0,022**				-0,030**				
Ageq				-0,0003**				+0,0005***	-0,0002*			
North - Centre (dum, 1/0)											+1,093*	,
Female (dum, 1/0)	+0,100***				-0,088*			-0,168***		+0,065*		+0,151***
Compulsory (dum, 1/0)			-0,126***	-0,153***			+0,624***	+0,304*	-0,270***	-0,182***	-0,256***	
High secondary			-0,059**			-0,135**	+0,401*		-0,115**		-0,235**	
Some work experiences (dum, 1/0)	-0,077**		-0,031*									
COM020 (dum, 1/0)	+0,101***							+0,125**				
COM2040	+0,057*							+0,094*	-0,052*			-0,088*
COM>500	-0,086*				+0,146***							
HouseholdHead (dum, 1/0)	-0,136***							+0,140*				
Children	-0,058*						-0,095**				+0,128**	+0.075*
Household income (,000 Log)	-0,05*	-0,09**				+0,050*			+0,037*			-0,083**
Family components (Log)		+0,156**										
Local unemployment rate	-0,342*	+0,939**	+0,202**		+0,763***			+0,997*	-0,462***			-1,486***
DIF NORTH - SOUTH												
Age*North			+0,02*				-0,029*					
Ageq*North			-0,0003*				+0,0004**					
Female*North	-0,147**				+0,105*		-0,188**				+0,176***	
Compulsory *North											+0,271**	
High secondary*North											+0,227*	
Some work experiences *North												
COM020*North	-0,142**											
COM2040 *North					-0,097*							
COM>500 *North	+0,121*				-0,115*							
HouseholdHead *North			-0,094*		-0,002							
Children*North					+0,024							
Household income *North							+0,118**				-0,090*	
N, Family components*North	+0,175**											
Local unemployment rate*North	+1,282***				-1,063**		+1,356**				-1,685***	
Constant	+0,504		-0,135	*	-0,518		+0,253		-0,352		+0,248	
Chi2(145)	743,49											
R2	0,15											

(§) For each variables we reported the derivatives (at sample means), and the value of the asymptotic t*-statistic. The chi2 reported in the bottom line tests the null hypothesis that all parameters except the constant are zero.*

6. Conclusions

From the results discussed above, it is possible to argue that individual resource endowment and labour market conditions play an important role as to the choice of the methods and, thus, of searching in the private and/or public sector. In the macro-areas where labour market is tight - North and Centre - unemployed consider as more effective the search methods linked to the private sector. On the contrary, in the South the lower level of economic activity drives unemployed to select the methods suitable to searching either in the public sector alone or both in the private and public sectors. The comparative analysis between the North-Centre and the South, reveals that in the South the same type of individuals with university degrees tend to mix the strategies and to search either in the public sector alone or along with the private sector. They also look for a job only in the private sector but prefer to combine checking advertisement on the newspaper, direct employer contact and sending curricula with personal contacts in labour market. Whereas in the North-Centre this educational effect is less strong, and individuals with university education differ only from those with compulsory schooling in choosing SEAPA alone or combined with SEAPRIV, while they differ from unemployed with high secondary education for SEAPRIV alone. Gender differences underline that in the North females are more likely to search in the private sector than in the South. Market tightness draws attention to the fact that increasing local unemployment rate in the South induces unemployed to choose either the public or the private sector; the latter result holds also in comparison with the North-Centre.

The evidence concerning the choice of state employment agency points to some stylised facts that can be summarised as follows: the link between the eligibility for unemployment insurance programs and the registration with state employment office induces individuals living in families with low income and a high number of components in the North-Centre and with low income in the South, to select this method. Moreover, the choice of the state employment agency is considered as effective in the North-Centre by individuals living in areas where the local unemployment rate is

high whereas in the South by individuals living in small municipalities and where the local unemployment rate is not so high. In this case the public job agency may result productive as to seasonal jobs.

Interestingly networks of social ties show some similarities with the state employment agency (SEA) as far as the difference between the North-Centre and the South is concerned. In fact in the North-Centre compared with the South, females are less likely to choose these channels and a higher local unemployment rate raises the probability. Moreover, a higher household income, which may also be considered as a proxy of personal contacts in labour market, makes resorting to networks effective with respect to the South. Finally, in the North, living in small municipalities seems to foster the choice of networks and to show that the embeddedness in small communities helps the reliability of information both on the ability of unemployed and on the characteristics of available jobs.

Appendix

Tab. A1 – MULTINOMIAL LOGIT ESTIMATES OF THE DETERMINANTS OF CHOOSING THE SEARCH METHODS - NORTH - CENTRE (n. 791) AND SOUTH (n. 1103) (§)

	SEA		SEAPA		SEAPRIV		SEANET		COMBPA		COMPRIV	
	NORTH CENTRE	SOUTH	NORTH CENTRE	SOUTH	NORTH CENTRE	SOUTH	NORTH CENTRE	SOUTH	NORTH CENTRE	SOUTH	NORTH CENTRE	SOUTH
Age			+0,008**				-0,015*					
Ageq			-0,0001**				+0,0003**		-0,0002*	-0,0002*		
Female (dum. 1/0)		+0,108***		-0,049*		-0,056*	-0,132***				+0,169***	
Compulsory (dum. 1/0)			-0,053***	-0,247***			+0,191*	+0,708***	-0,123***	-0,330***		-0,196***
High secondary				-0,122***	-0,190**			+0,443*		-0,149**		-0,180**
Some work experiences (dum. 1/0)		-0,072*				+0,047*	+0,080**					0,060*
COM020 (dum. 1/0)		+0,112***					+0,083**					
COM2040		+0,066**								-0,061**	-0,085*	
COM>500						+0,098***						
Household head (dum. 1/0)		-0,149***										
Children								-0,103**				+0,093**
Household income (.000 Log)	-0,059**	-0,054*			+0,093**					+0,045*	-0,11***	
Family components (Log)	+0,121**	-0,022					+0,900**					
Local unemployment rate	+0,786**			+0,415***		+0,484***				-0,483***	-1,618***	
Constant	+0,147	+0,566	-0,191*	-0,263	-0,499	-0,309	-0,495	+0,269	-0,511**	-0,420	+1,550***	+0,156

(§) For each variables we reported the derivative (at sample means), and the value of the asymptotic t*-statistic. The chi2 reported in the bottom line tests the null hypothesis that all parameters except the constant are zero.*

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